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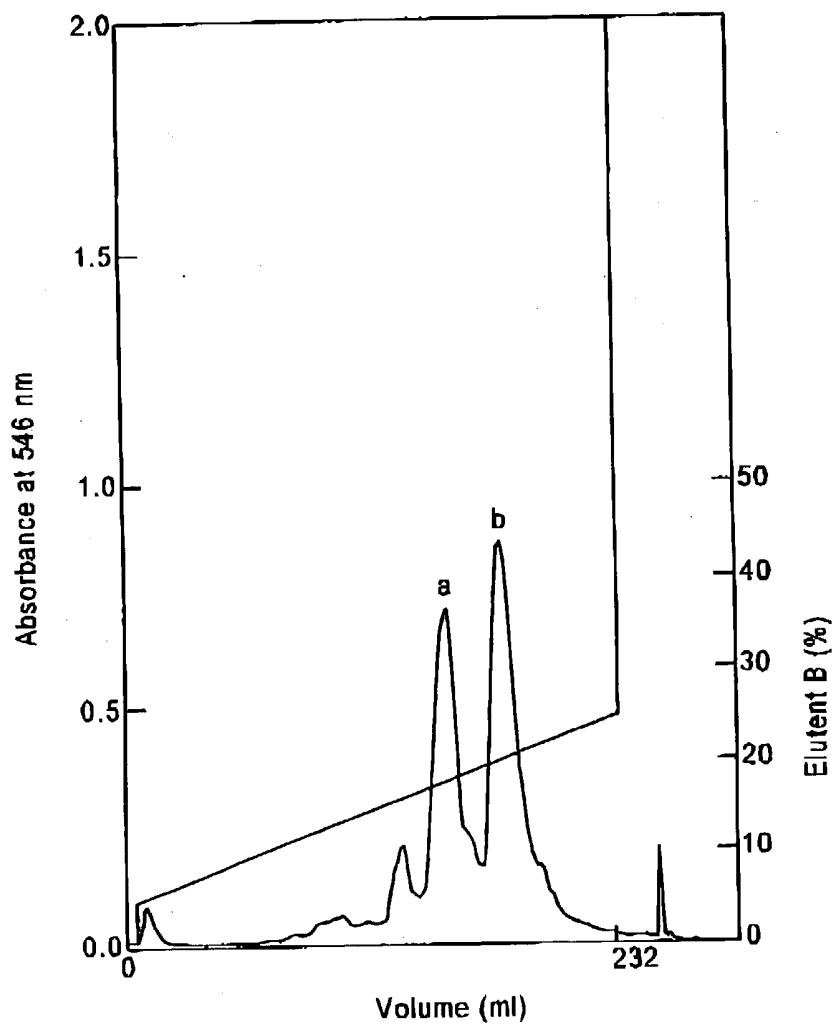
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 RBS | ->  $\alpha$ -globin  
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 CCGCACTTCG ATCTGAGCCA CGGCTCTGCC CAGGTTAAGG GCCACGGCAA GAAGGTGCC  
 GACGCGCTGA CCAACGCCGT GGCGCACGTG GACGACATGC CCAACGCCGT GTCCGCCCTG  
 AGCGACCTGC ACGCGCACAA GCTTCGGGTG GACCCGGTCA ACTTCAAGCT CCTAAGCCAC  
 TGCCCTGCTGG TGACCCCTGGC CGCCCACCTC CCCGCGGAGT TCACCCCTGC GGTGCACGCC  
 TCCCTGGACA AGTTCCCTGGC TTCTGTGAGC ACCGTGCTGA CCTCCAAATA CCGTTAAACT  
 RBS | ->  $\beta$ -globin  
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 GTGAGGCCCT GGGCAGGCTG CTGGTGGTCT ACCCTTGGAC CCAGAGGTTC TTTGAGTCCT  
 TTGGGGATCT GTCCACTCCT GATGCTGTTA TGGGCAACCC TAAGGTGAAG GCTCATGGCA  
 AGAAAGTGCT CGGTGCCCTT AGTGATGCC TGGCTCACCT GGACAACCTC AAGGGCACCT  
 TTGCCACACT GAGTGAGCTG CACTGTGACA AGCTGCACGT GGATCCTGAG AACTTCAGGC  
 $\beta$ 108Asn->Gln  
 TCCTGGACA AGTACTGGTC TGTGTGCTGG CCCATCACTT TGGCAAAGAA TTCACCCAC  
 CAGTGCAGGC TGCCTATCAG AAAGTGGTGG CTGGTGTGGC TAATGCCCTG GCCCACAAGT  
 ->| SphI rrb(58,T1,T2)  
 ATCACTAAGC ATGCATCTGT TTTGGCGGAT GAGAGAAAGAT TTTCAGCCTG ATACAGATTA  
 NsiI

FIG. 1A

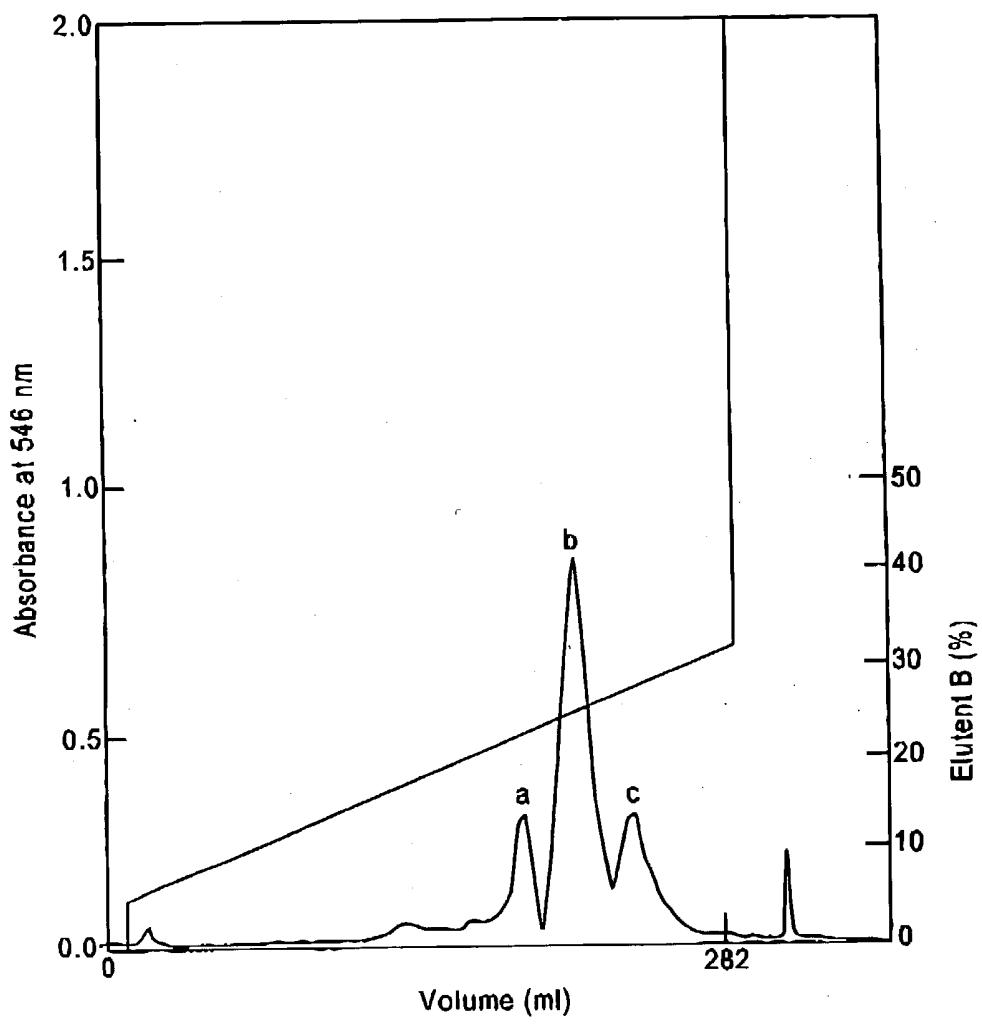
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 TCCCTGGACA AGTTCCCTGGC TTCTGTGAGC ACCGTGCTGA CCTCCAAATA CCGTTAAACT  
 RBS | ->  $\beta$ -globin  
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 AGAAAGTGCT CGGTGCCCTT AGTGATGGCC TGGCTCACCT GGACAAACCTC AAGGGCACCT  
 TTGCCACACT GAGTGAGCTG CACTGTGACA AGCTGCACGT GGATCCTGAG AACTTCAGGT  
 $\beta$ 105Leu->Trp  
 GGCTAGGCCAA CGTGCCTGGC TGTGTGCTGG CCCATCACCT TGGCAAAGAA TTCACCCAC  
 CAGTGCAGGC TGCCTATCAG AAAGTGGTGG CTGGTGTGGC TAATGCCCTG GCCCACAAGT  
 -> SphI  $\chi$ B(5S, T1, T2)  
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 NsiI

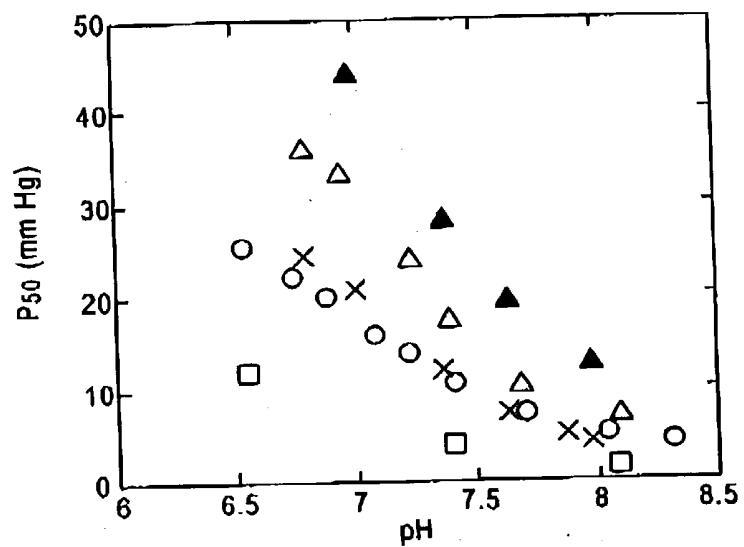
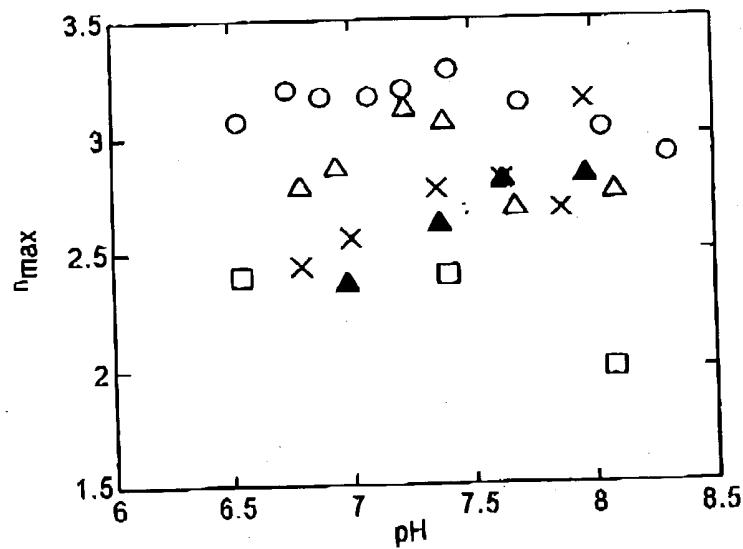
FIG. 1B

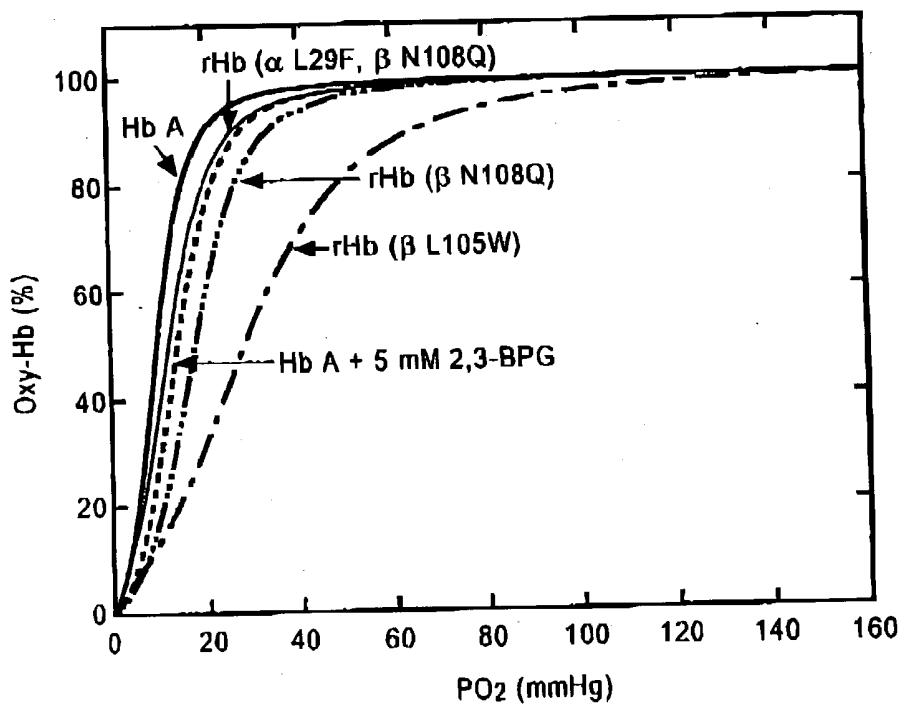


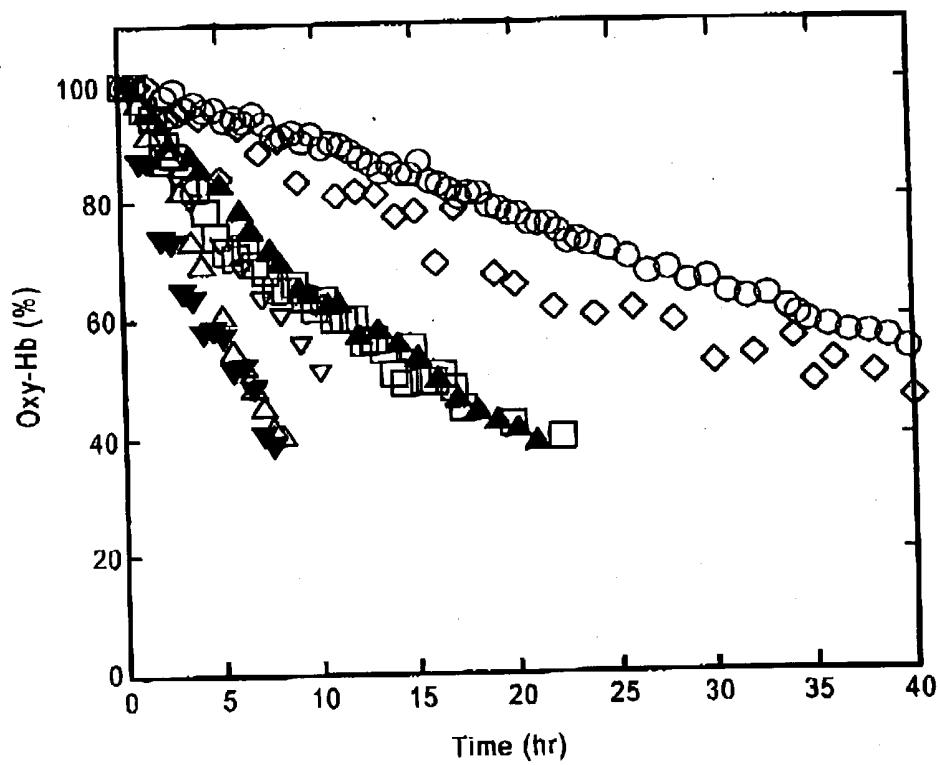
**FIG. 2A**

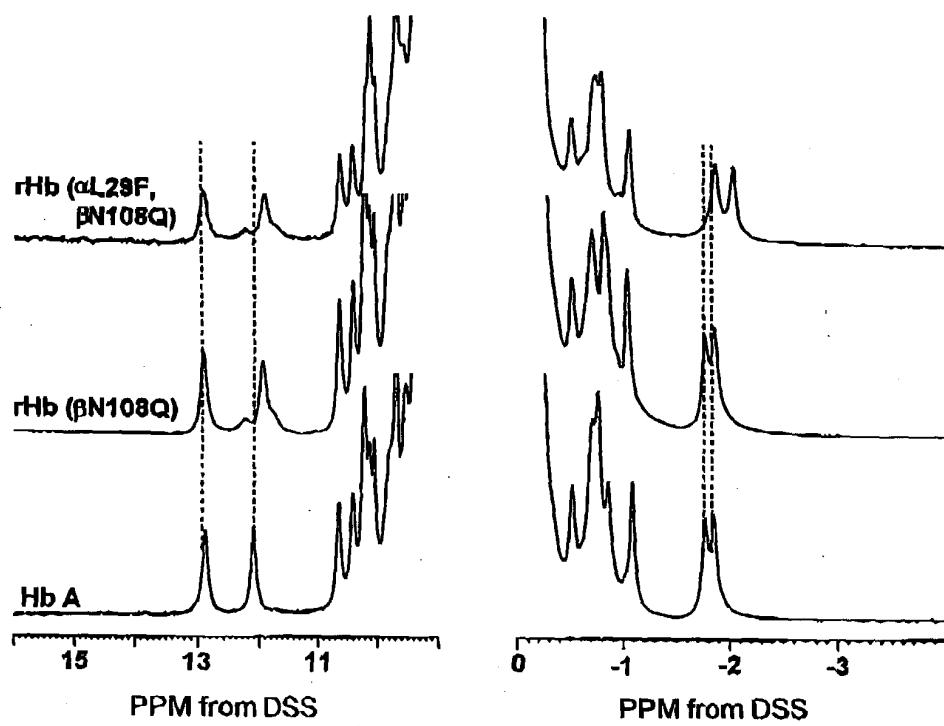


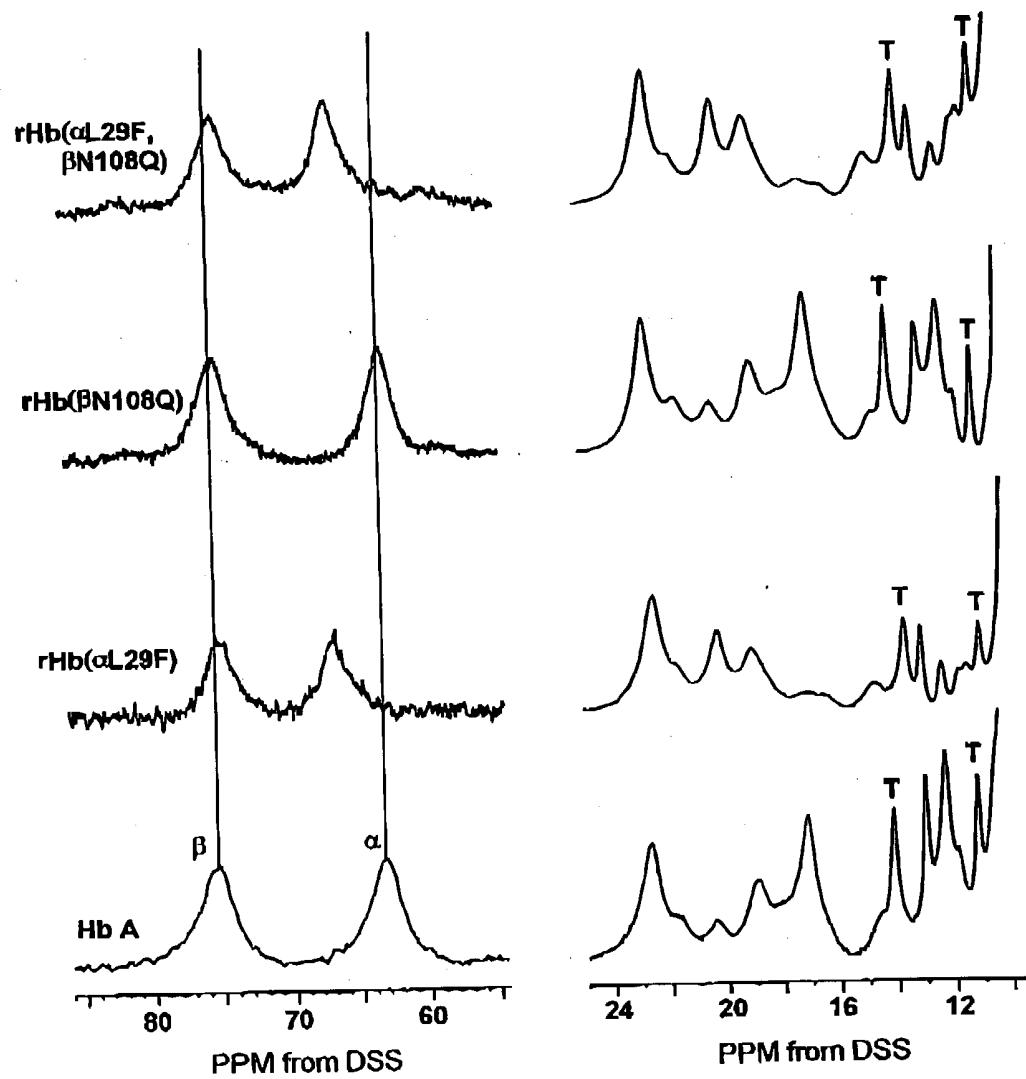
**FIG. 2B**

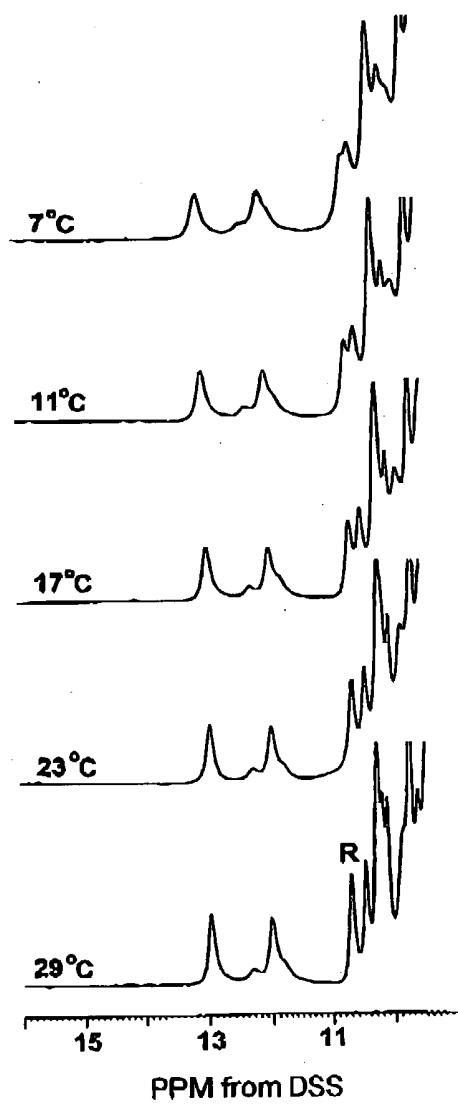
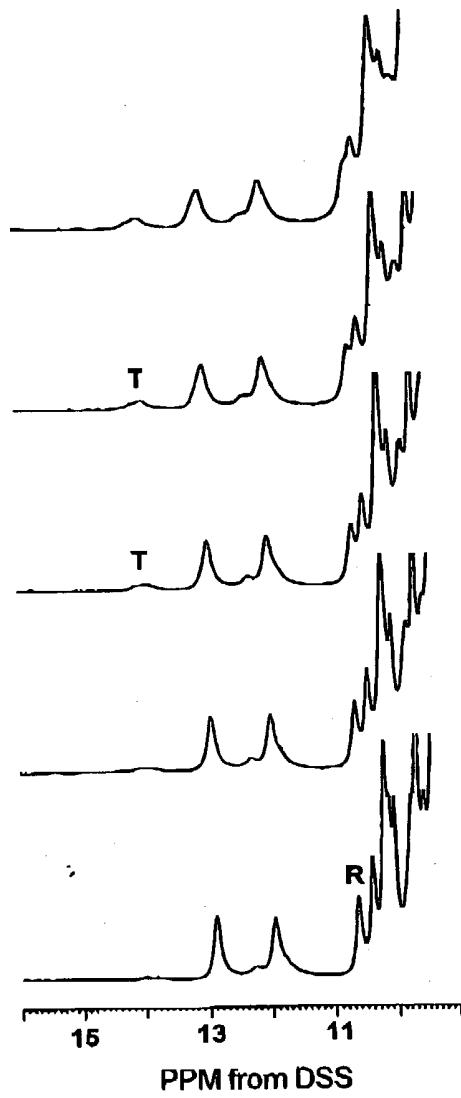
**FIG. 3A****FIG. 3B**

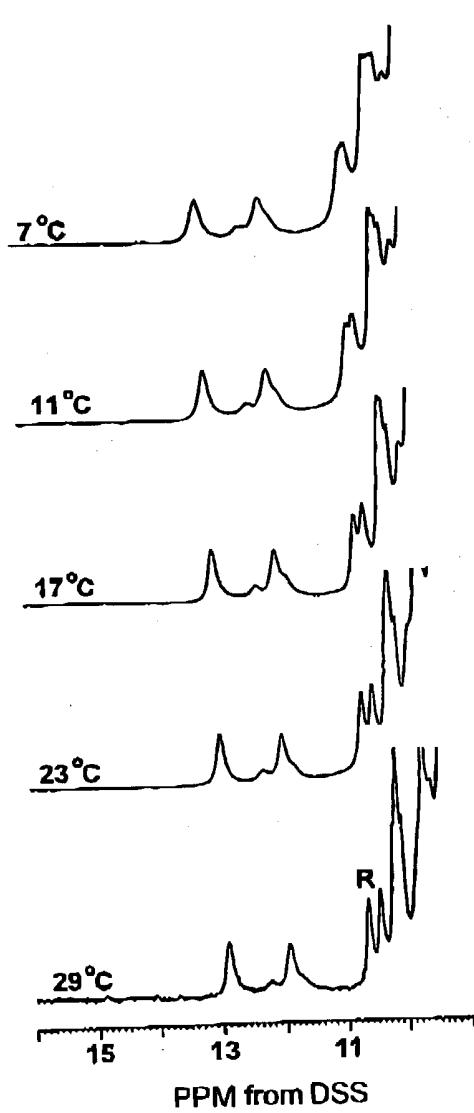
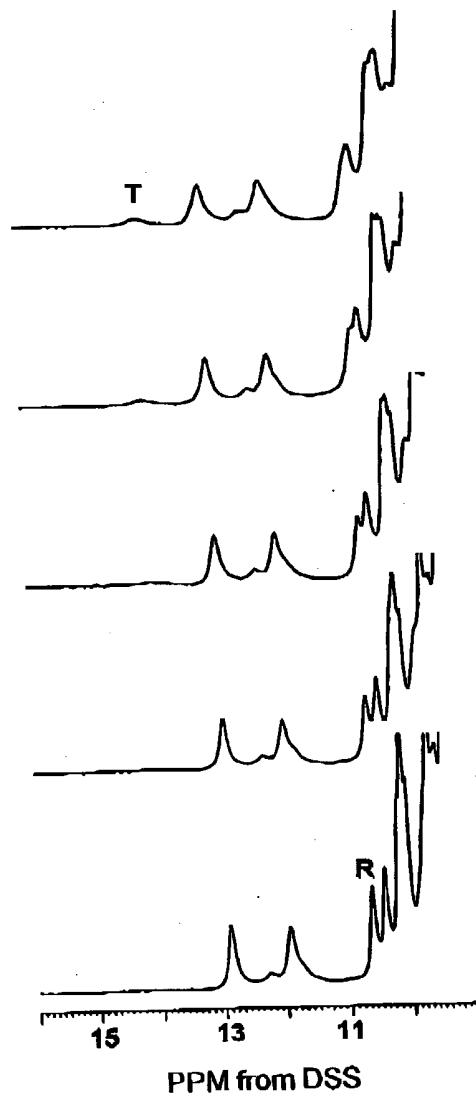
**FIG. 4**

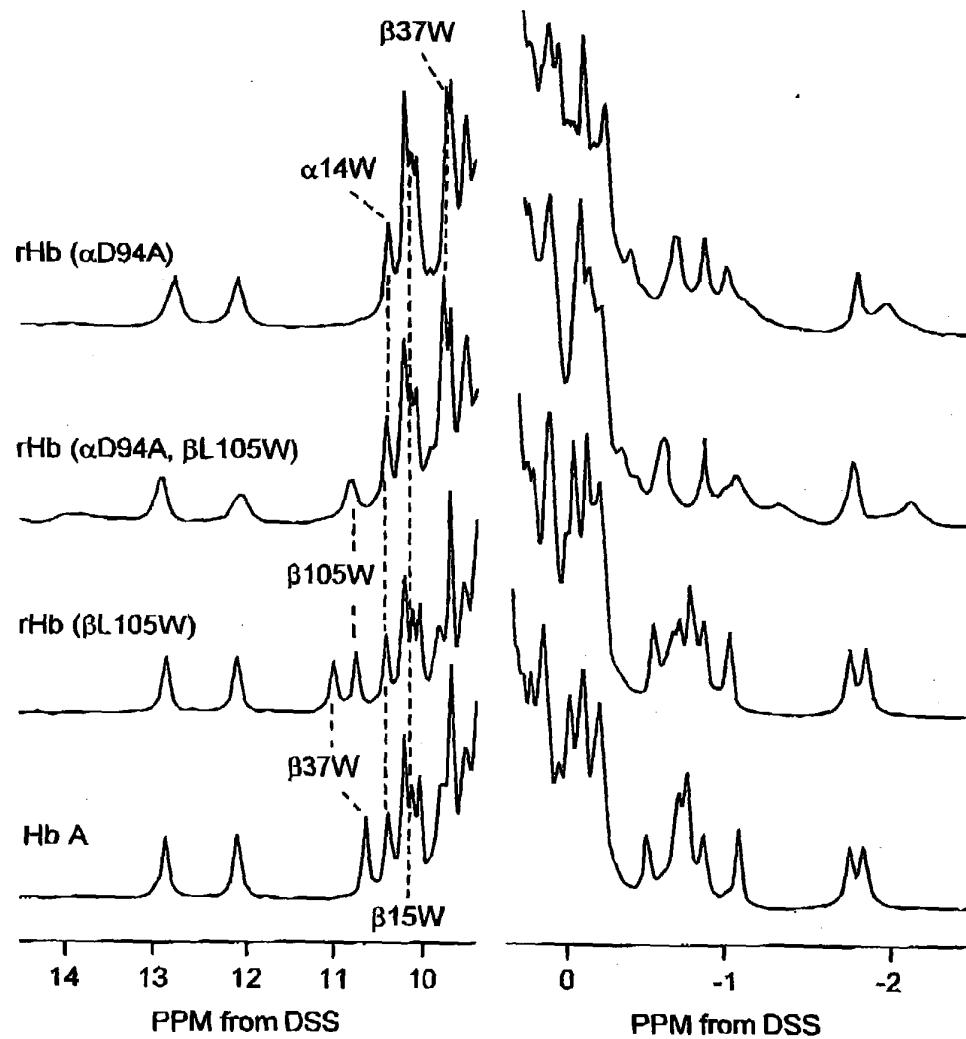
**FIG. 5**

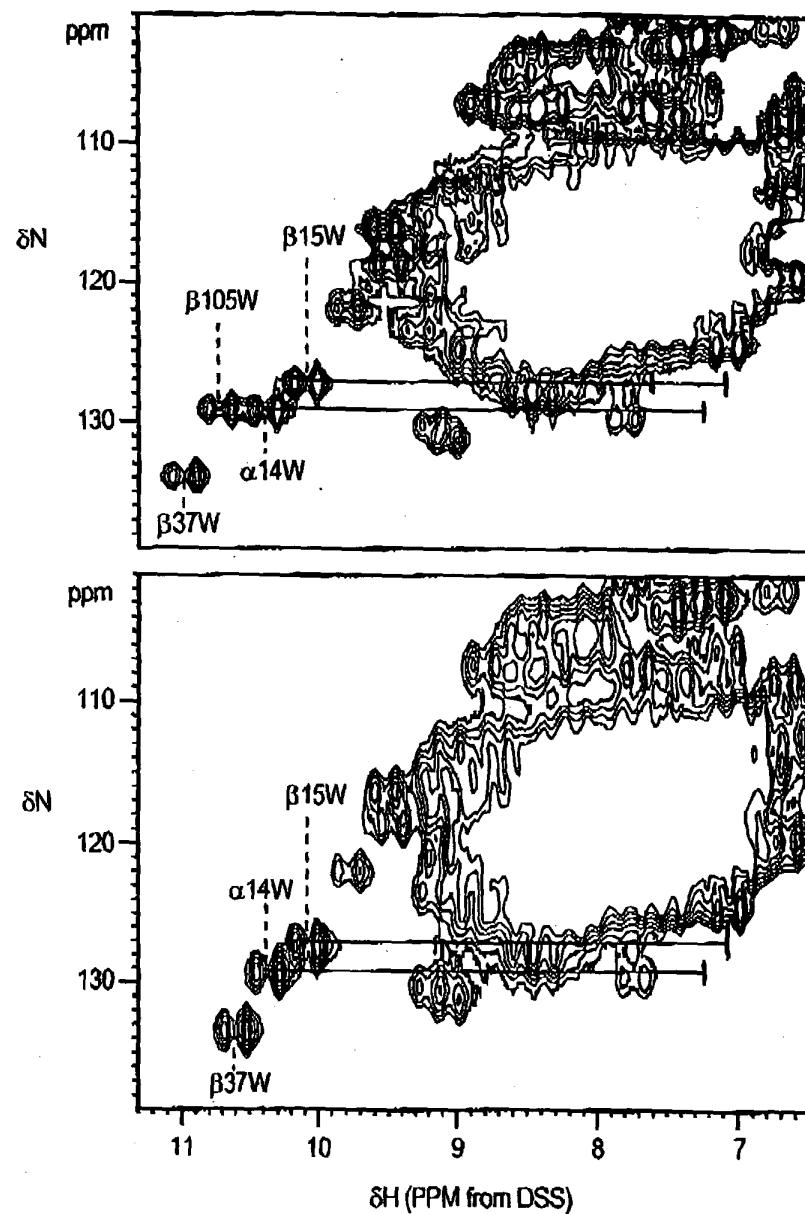
**FIG. 6A****FIG. 6B**

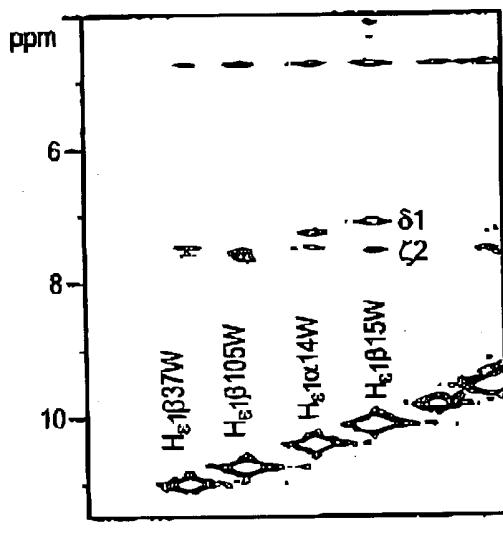
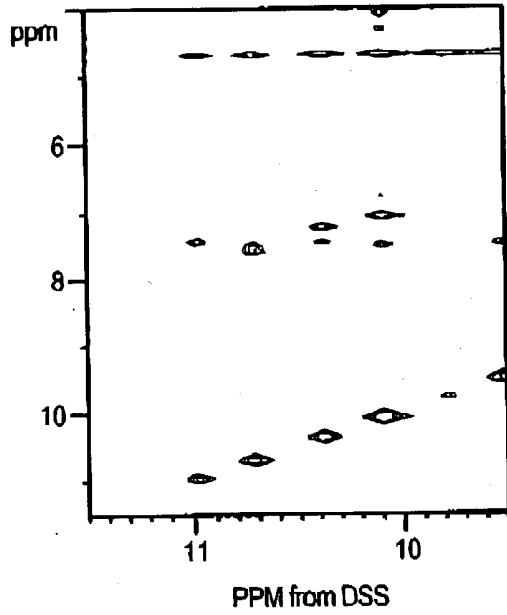
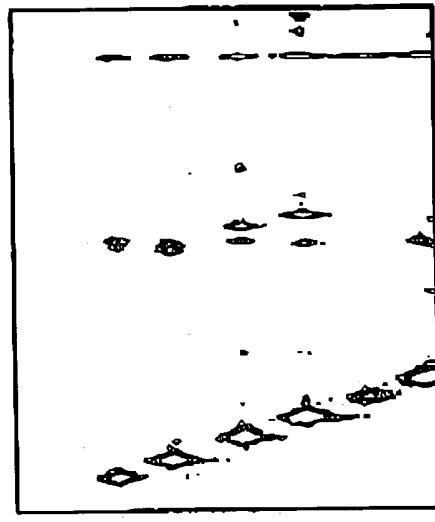
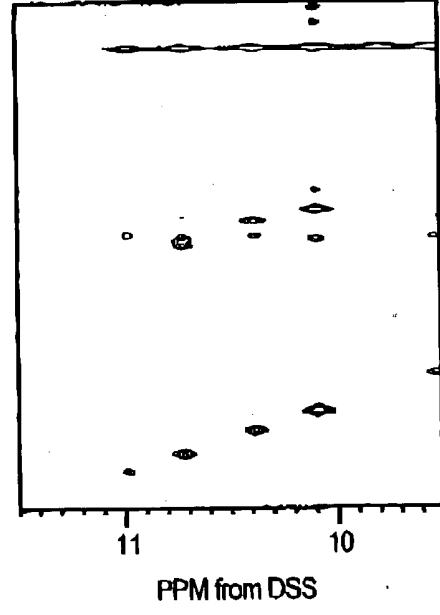
**FIG. 7A****FIG. 7B**

**FIG. 8A****FIG. 8B**

**FIG. 9A****FIG. 9B**

**FIG. 10A****FIG. 10B**

**FIG. 11A****FIG. 11B**

**FIG. 12A****FIG. 12B****FIG. 12C****FIG. 12D**

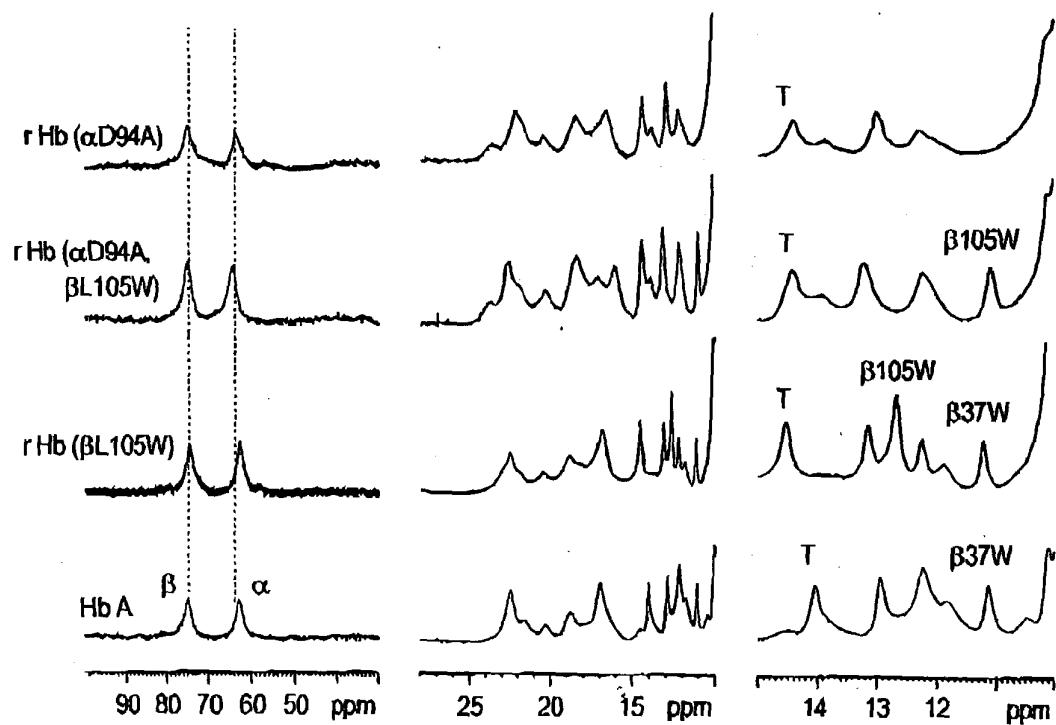
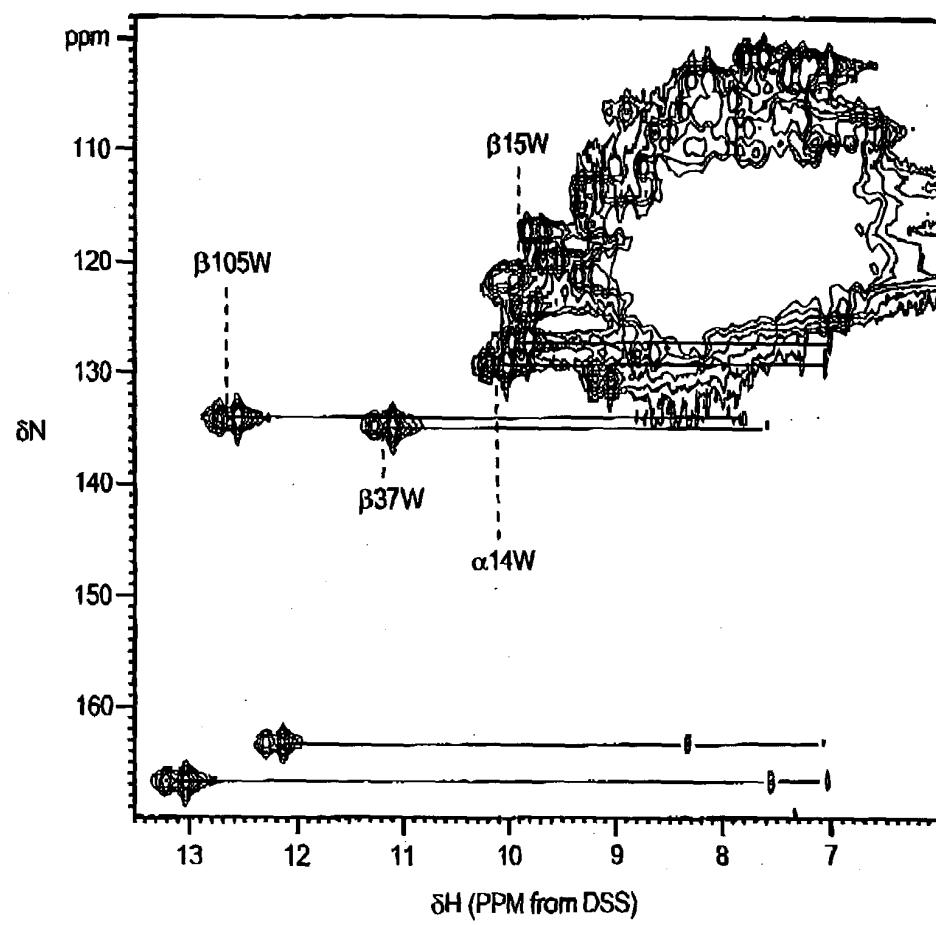
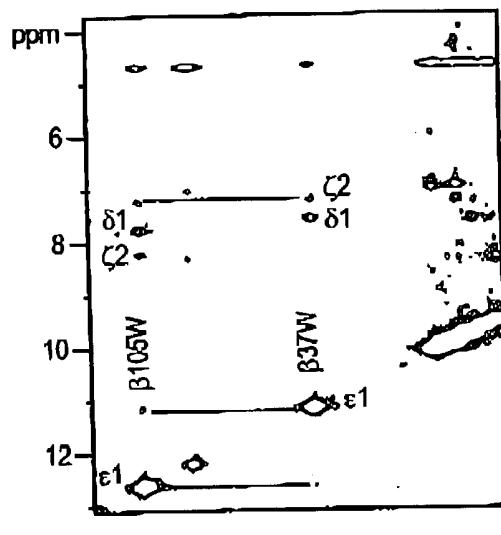
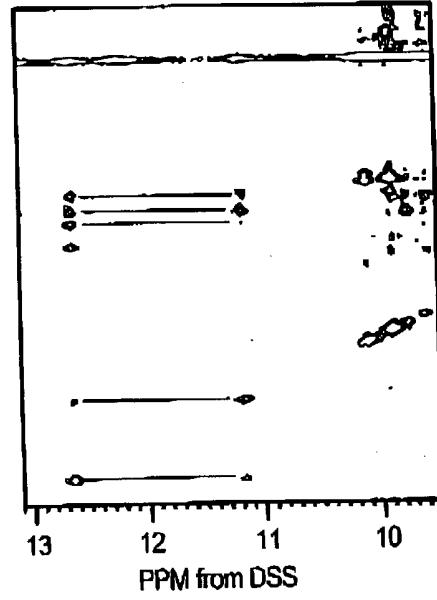
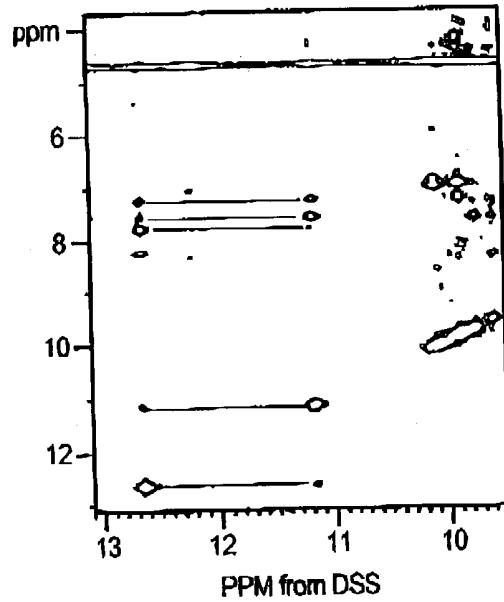
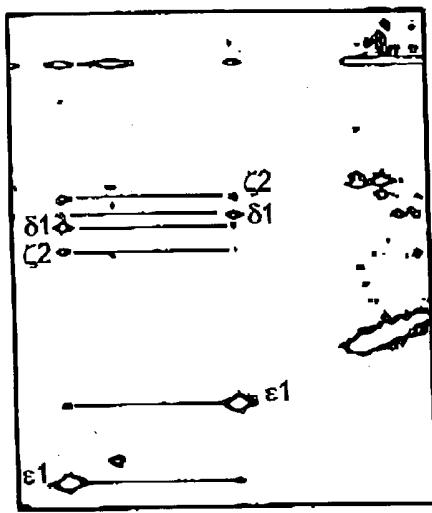


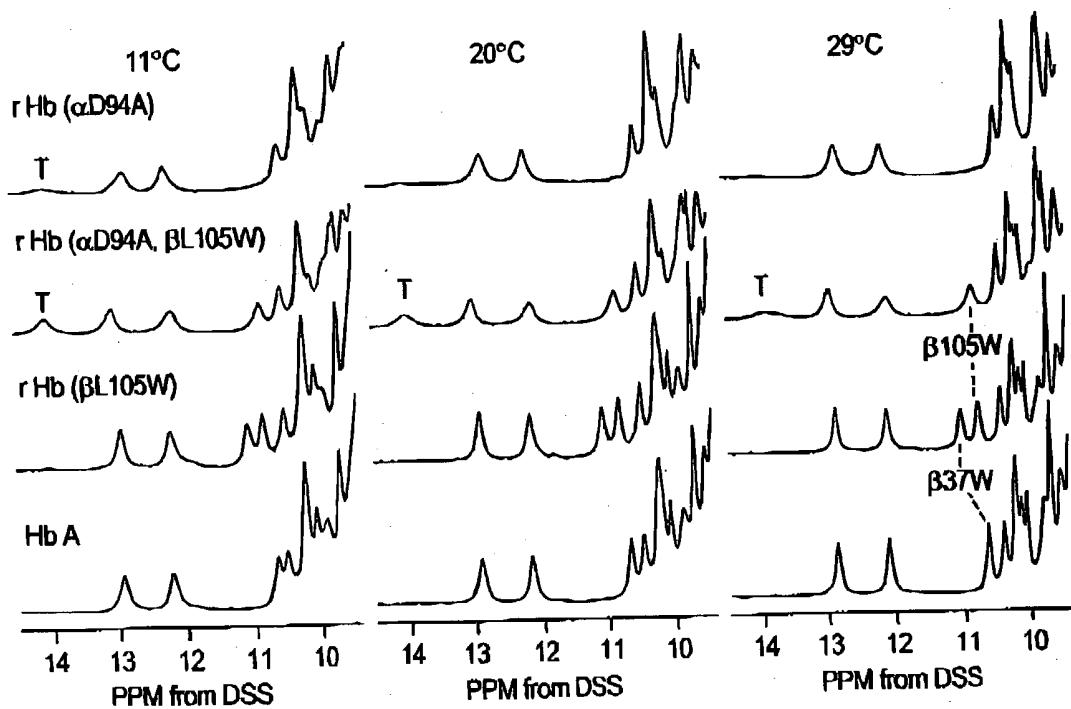
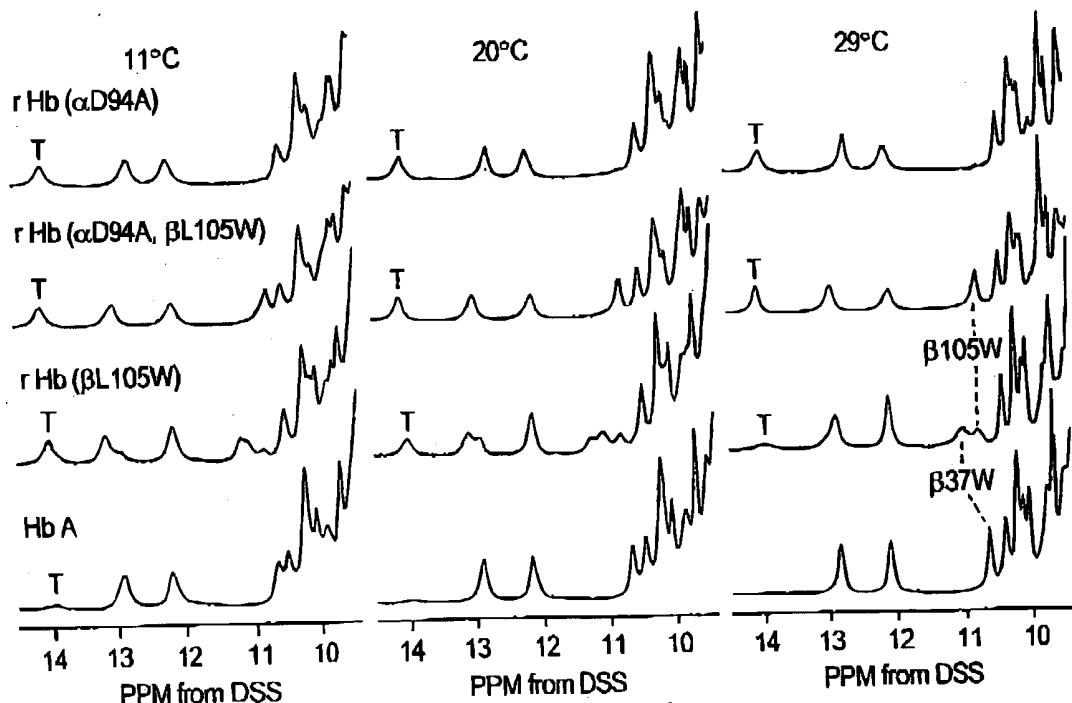
FIG. 13A

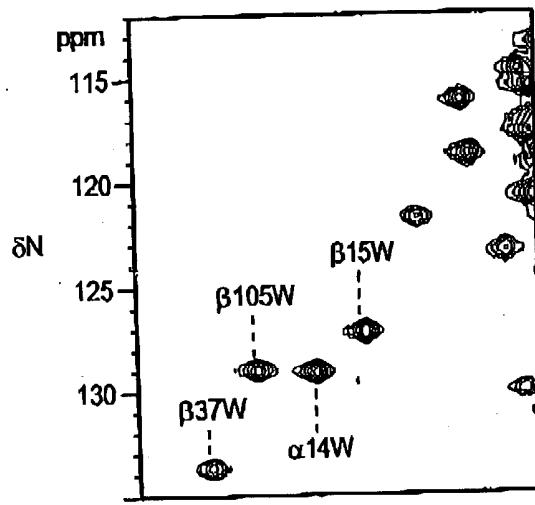
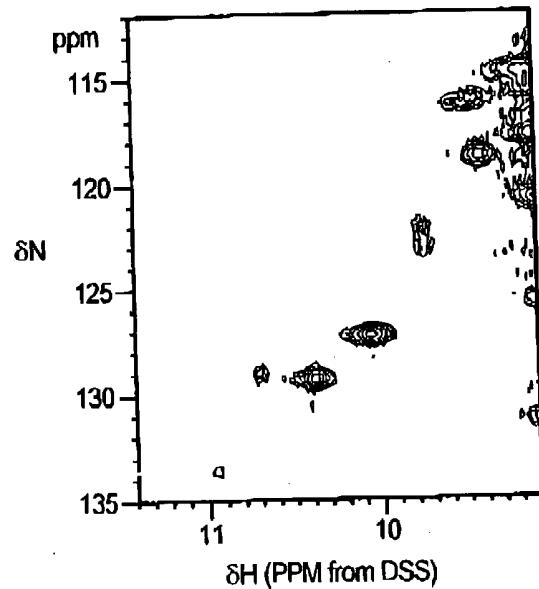
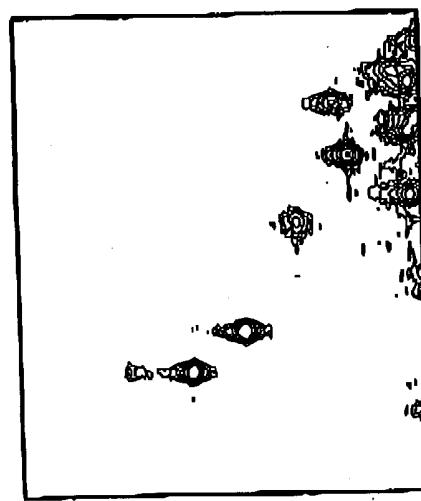
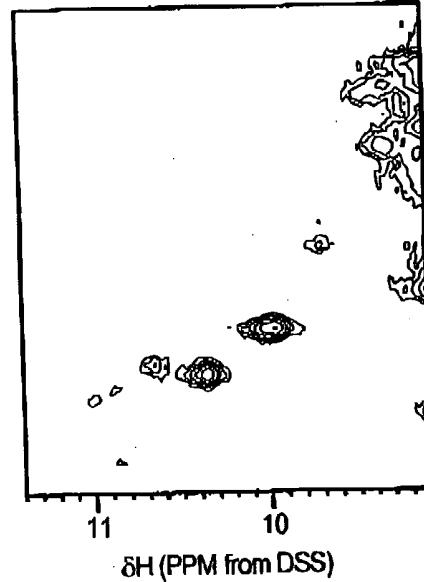
FIG. 13B

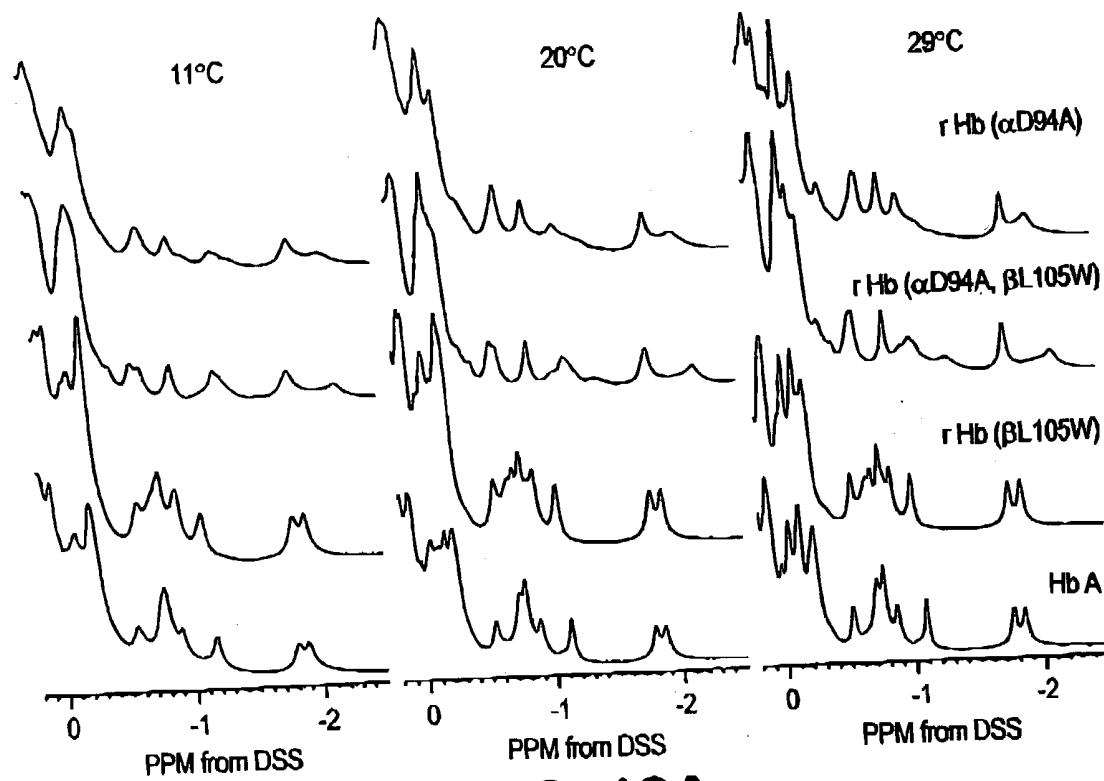
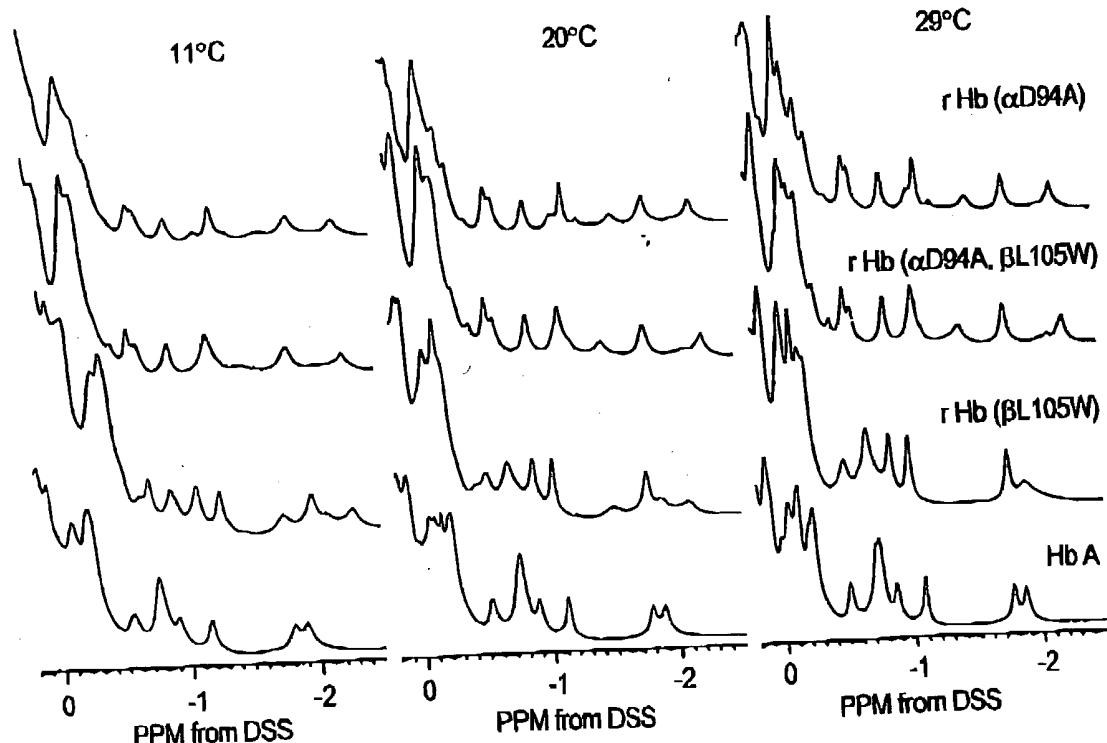
FIG. 13C

**FIG. 14**

**FIG. 15A****FIG. 15B****FIG. 15C****FIG. 15D**

**FIG. 16A****FIG. 16B**

**FIG. 17A****FIG. 17B****FIG. 17C****FIG. 17D**

**FIG. 18A****FIG. 18B**